WHAT IS CLAIMED IS:

1. An optical pickup for performing at least one of recording and reproduction of bits of information onto and from an information recording medium by using a single polarized optical beam having a single polarizing direction, comprising:

a polarization converting unit configured to convert the single polarized optical beam to plural polarized optical beams having a plurality of polarizing directions;

a converting and radiating unit configured to convert polarization modes of the plural polarized optical beams to a polarization mode suitable for one of the recording and the reproduction to produce polarization-converted optical beams, every polarizing direction, and to radiate the polarization-converted optical beams to the information recording medium;

a mode returning unit configured to return polarization modes of the polarization-converted optical beams reflected from the information recording medium, to the same polarization mode as that of the plural polarized optical beams and to produce plural polarized reflected optical beams; and

a polarization returning unit configured to return polarization modes of the plural polarized reflected optical beams to the same polarization mode as the single polarized optical mode.

2. The optical pickup according to claim 1, wherein the polarization mode of the single polarized optical beam is a linear polarization having a predetermined direction,

the polarization converting unit includes a division converting unit configured to have the plural polarized optical beams by dividing the single polarized optical beam spatial-equally into even-numbered portions of the beam that are point-symmetry about an optical axis of the single polarized optical beam, polarization modes of the divided portions consisting of a first portion having a first linear polarized light flux and a second portion having

a second linear polarized light flux orthogonal in a polarizing direction to the first linear polarized light flux, the first and second portions being adjacent to each other,

the converting and radiating unit is configured to convert the polarization modes of the plural polarized optical beam so that the first linear polarized light flux is converted to a first circular polarized light flux and the second linear polarized light flux is converted to a second circular polarized light flux,

the mode returning unit is configured to handle polarization modes of the reflection light of the plural polarized optical beam so that the first circular polarized light flux is converted to the first linear polarized light flux and the second circular polarized light flux is converted to the second linear polarized light flux, thereby producing the plural polarized reflected optical beams, and

the polarization returning unit is configured to convert the polarization modes of the plural polarized reflected optical beams to the linear polarization having the predetermined direction.

3. The optical pickup according to claim 1, which is applied to a compatible optical pickup usable for at least one of recording and reproduction of bits of information on and from a first format disk and a second format disk, the compatible optical pickup comprising:

a first emission unit configured to emit the single polarized optical beam on the linear polarization having the predetermined direction when the first format disk is subjected to at least one of the recording and the reproduction; and

a second emission unit configured to emit an orthogonal optical beam whose polarizing direction is orthogonal to the single polarized optical beam on the linear polarization having the predetermined direction when the second format disk is subjected to at least one of the recording and the reproduction,

wherein the polarization converting unit is configured to convert a

polarization mode of the first portion of the orthogonal optical beam to the second linear polarized light flux and to convert a polarization mode of the second portion of the orthogonal optical beam to the first linear polarized light flux.

4. The optical pickup according to claim 1, further comprising a polarization acting unit configured to have a region consisting of a first region through which the first portion of the plural polarized optical beams passes and a second region through which the second portion of the plural polarized optical beams passes, the first region having a polarization-dependent characteristic acting on the first linear polarized light flux and the second region having a polarization-dependent characteristic acting on the second linear polarized light flux.

5. The optical pickup according to claim 2, wherein the division converting unit is composed of a half wavelength plate.

6. The optical pickup according to claim 1, wherein the polarization converting unit is provided with a quarter wavelength plate.

7. The optical pickup according to claim 4, wherein the polarization acting unit is configured to act as an aberration collecting element.

8. The optical pickup according to claim 4, wherein the polarization acting unit is composed of a polarizing hologram lens.

9. The optical pickup according to claim 4, wherein the polarization acting unit is composed of a liquid crystal panel.

10. The optical pickup according to claim 4, wherein the polarization acting unit is configured to function as a compatible element used for at least one of the recording and the reproduction of the first format

disk, to an objective lens used for at least one of the recording and the reproduction of the second format disk.

11. The optical pickup according to claim 3, wherein the single polarized optical beam is formed by red light and the orthogonal optical beam is formed by blue light.